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SOURCE Periodicals as indicated.

HUNGARIAN WEATHER REPORTS  
1 DECEMBER 1951 - 10 JUNE 1952

So far, the most complete Hungarian weather reports, signed by Zoltan Ozorai, have appeared in the monthly periodical Termeszt es Technika (Nature and Technology). Brief weather reports and daily forecasts appear in the Hungarian press available in FDD, while the semimonthly Magyar Mezogazdasag (Hungarian Agriculture) publishes weather reports covering the 2 weeks immediately preceding the date of publication.

The usual monthly weather reports, covering February and April, were omitted from the April and June 1952 issues of Termeszt es Technika. While a weather report (1 March - 15 April), signed by Alfred Zach, did appear in the May 1952 issue, it did not measure up in detail and factual information to the previous ones. Also, Zach's report was not accompanied by a weather chart, as had been appended to the Ozorai reports.

In Ozorai's last two reports, presented below, more especially in the one covering January, a marked change may be detected in that fewer details are given in comparison with the wealth of detail contained in his previous reports. It seems possible that Ozorai had been warned against excessive detail in his reports, and that eventually they were completely discontinued.

To supplement the missing reports, as well as Zach's report, the reports appearing in Magyar Mezogazdasag have been exploited. Attention is called to the fact that no report was published by Magyar Mezogazdasag for the period 15 - 29 April 1952.

Degrees are given in centigrade. Numbers in parentheses refer to appended sources.

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December 1951

Weather conditions during December 1951 were generally well balanced. The averages and totals for the month did not show the sharp deviations which can be found in the preceding months. Aside from one or two exceptions, the weather was slightly milder than usual, thus conforming to the characteristic of the current century, namely, a mild December. In the northeast, however, especially around Debrecen, as well as in the area bounded by the Tisza, Szamos, and Tur rivers, protracted frost occurred due to a several-centimeter-deep snow cover formed in mid-month. As a result, the average monthly temperature in these areas fell below the national average and at Nyirbeltek, even below the freezing point. The weather was particularly mild around Keszthely and Farad (deviating by 1.2 and 1.1 degrees, respectively).

The distribution of precipitation was also fairly uniform, although there was a deviation of 48 millimeters between Kunpeszer, where the minimum was reported (14 millimeters or 31 percent of normal), and Felsoszentmarton, which reported the maximum (62 millimeter, 117 percent). In general, the amount of precipitation was small, particularly in the northern megyek, with the exception of the Mátra and Bükk mountains. Distribution of rainfall was, however, uniform during the month. There were only 3 days (15th, 17th, and 19th) without any rain. Nevertheless, in view of a few interesting events, it is worth while to review the weather conditions during the month.

On 1 December, a warm sea air current covered Hungary, causing the temperature to rise above 10 degrees in most parts of the country and as high as 14 degrees at Kaposvar and Pécs. This was the warmest day of the month at Budapest, on the Little Plain (Gyor-Komárom Megye), at Farad, and Nyiregyháza.

On the 2d, the temperature dropped considerably, due in part to the arrival of cooler air in the Carpathian basin and partly to a fog which covered large areas. Although the nocturnal weather was temperate, diurnal warming for the country as a whole reached only 3-5 degrees.

Subsequently, the temperature began to rise slowly, reaching its high in various areas on the 5th, 6th, and 7th, respectively. Higher temperatures were reported on the 5th from Putnok and Fügöd (11 degrees) and from Sopron (12 degrees); on the 6th, from Keszthely and Lengyel (12 degrees) and from Pécs and Kaposvar (14 degrees); and on the 7th, from Lenti, Szarvas, and Orosháza (12 degrees). The nocturnal temperature was the most moderate on the 5th, when only surface frost was reported. On the other hand, considerable deviations occurred on the 7th: the lowest temperature was 7 degrees at Keszthely and Nagykanizsa and 9 degrees at Kaposvar, while Szombathely and Debrecen reported - 5 degrees near the surface.

On the 7th, it rained over the entire country. The rainfall was particularly heavy in the southwestern megyek, amounting to 22 millimeters at Lenti and Hahót, that is, more than the total which fell at Kunpeszer during the entire month.

On the 8th, the temperature fell again and did not reach 10 degrees in any locality, while on the 9th, the temperature rose above 10 degrees along the southern border of the country. This mild wave was followed by an unusual phenomenon. In the evening hours of the 10th, thunderstorms occurred in various parts of Vas, Zala, Somogy, and Veszprem megyek, followed by hailstorms south of the Balaton (at Badacsony, Somogytúra, Sümeg, Uzza, and Zalavár). In several localities, the storms were accompanied by snow flurries.

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The precipitation which fell during the storms was generally little, exceeding 5 millimeters in a few places only. In the southern megyek, on the other hand, the rainfall amounted to over 10 millimeters without storms. The cool air which had caused the thunderstorms and hailstorms extended over the entire country on the 11th, when the temperature rose to only 2-5 degrees, with the exception of Szombathely. In the eastern megyek the snow which fell during the night from the 10th to the 11th remained on the ground, causing considerable nocturnal cold in the morning of the 12th and 13th. The lowest surface temperatures were -10 degrees at Turkeve and -15 degrees at Debrecen.

During the following days, sharp deviations in temperatures occurred between the western and eastern parts of Hungary. In the west, only slight nocturnal frosts developed, while the diurnal temperature approached 5 degrees. In the east, on the other hand, the nocturnal cold persisted (as low as -10 degrees) and the diurnal temperature did not rise considerably above the melting point; in some localities the frost even lasted during the entire day. Due to repeated minor snowfalls, the snow cover increased along the eastern border, reaching a depth of 8-10 centimeters in certain localities.

During the arrival of the cold waves in Hungary from the northwest, practically without interruption, a descending air current developed over the eastern regions of France and southern Germany. This descending air current gradually extended eastward and covered the Carpathian basin on the 20th. As a result, the clouds broke up, which increased nocturnal cold. In several localities, the temperature fell to the lowest point for the month on the 20th and 21st: to -6 degrees at Kecskemet, -8 degrees at Parad, -10 degrees at Nyireghyaza, and -13 degrees at Debrecen, with surface temperature in several places at Debrecen as low as -15 degrees.

During the next few days, milder air infiltrated into Hungary from the southwest, and the resulting fog lasted for a whole day. The fog obstructed the sun rays, and as a result, the diurnal temperature fluctuated very little. In the east, after a heavy nocturnal drop, the diurnal temperature rose only to -2 to -4 degrees, and diurnal frosts occurred even in the west.

On the 23d and 24th, the fog, as well as hoarfrost, increased. The hoarfrost was harmful and damaged the power lines at Nagyvaszony and Pecsvarad. In several parts of the country, this was the coldest morning as, for example, at Kaposvar (-5), Pecs, Budapest, Kecskemet and Veszprem (-6); at Szeged and Lengyel (-7) on the 24th; and at Bekescsaba and Szarvas (-8); and at Nyirbeltek (-14) on the 25th.

On the 26th, finally, the fog broke up and the sun began to shine, if only for a short time. Due to the arrival of mild air, the temperature, especially in the southern megyek, rose above 5 degrees and even to 8 at Győr, 9 at Nagykanizsa and Bekescsaba, and 10 at Pápa.

On the 28th and 29th, it rained practically everywhere in the country. During these 2 days, precipitation totaled 32 millimeters at Balassagyarmat, 31 at Budapest, 28 at Vac, Kunszentmiklos, and Alcsut, and 26 millimeters at Bodvaszilas. The mild weather lasted until the end of the month. Diurnal temperatures fluctuated between 5 and 7 degrees, nocturnal temperatures fluctuated between 2 and 4 degrees, and surface frost occurred infrequently.(1)

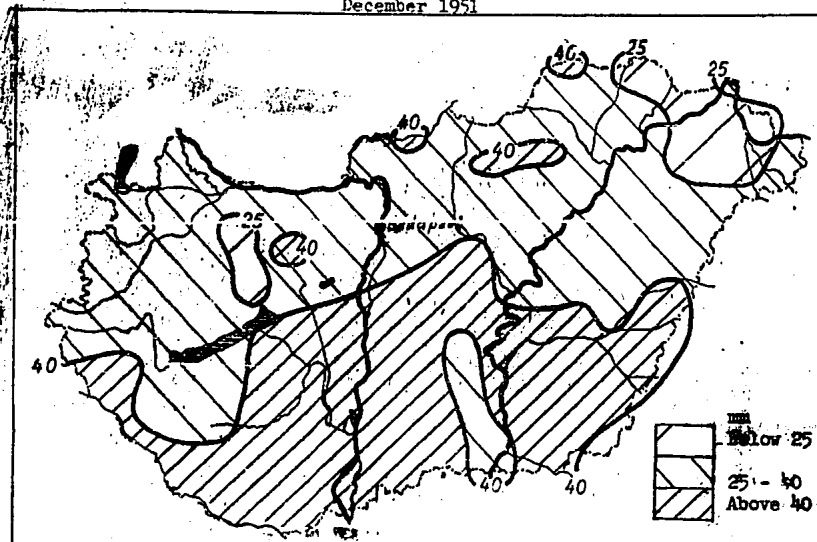
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Distribution of Precipitation  
December 1951



#### January 1952

The weather during January 1952 represented a natural continuation of December 1951 weather conditions. With due regard to monthly average temperatures, it may be said that the weather was considerably milder than usual. The temperature was one to 2 degrees higher practically everywhere, with the exception of the trans-Danubian region. At Nagykanizsa, for example, the temperature was lower than average.

Considerable deviations were observed in the distribution of precipitation also. While a large part of the country received the normal amount of precipitation, only a fraction of the usually small January rainfall was reported from some parts of the Great Plain. The following review reveals the heavy fluctuations which occurred in a usually mild month.

The first 4 days of January were very mild, especially in the western megyek. In many localities, frost did not occur even at night. There was precipitation every day; as a result, a connected snow cover was formed on the mountains only. Between the 5th and 10th, the weather was cooler and rainfall was negligible. On the 10th, a warm air current arrived from the southwest, causing rains in the whole country. The warm air showed its effect also on the soil surface during the next 2 days; as a result, the weather was again very mild on the 11th and 12th.

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On the 12th, dawn frost occurred only sporadically, while in the afternoon, thunderstorms with plentiful rains broke out in Baranya Megye. At Siklos, for example, the rainfall amounted to 30 millimeters, at Mohacs to 22 millimeters and at Barcs to 18 millimeters. The storms were followed by a cooler air wave, which had arrived after the mild air current of the 10th. The warm air wave reduced the diurnal temperature to some extent and increased the nocturnal cold; nevertheless, the weather in general remained mild. Precipitation occurred every day, in larger amounts, however, only in the northern megyek. As a result, the snow cover increased in depth in the latter areas.

On the 16th, the weather turned very mild again, the temperature advancing to 8-9 degrees in the south. Subsequently, however, the weather turned cold in some parts of the country. A cold air wave arrived from the northwest and the snow cover increased in depth in the north and west. On the 19th, enormous snowdrifts occurred in the Matra and Ekk areas, which isolated several towns, such as Borsodnadasd, from the outside world. The presence of the snow cover and the breakup of the clouds caused a considerable fall in temperature in the western megyek. The thermometer dropped to -12 at Szentgotthard on the morning of the 20th, to -10 at Miskolc on the 23d, and to -12 at Debrecen and Nyiregyhaza on the 24th.

After a transitional period of mild weather, the northerly wind became a storm on the 27th and 28th, causing huge snowdrifts. At Budapest, the maximum wind velocity was 28 meters per second on the 28th, which was unparalleled during recent years.

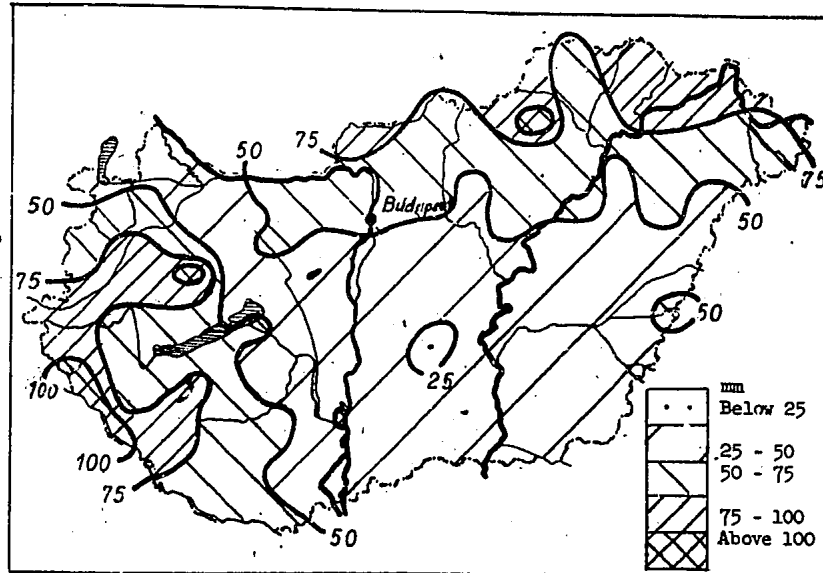
Fortunately, the strong wind was not accompanied by polar air and, as a result, the snow and ice melted everywhere during the day. The melting was accelerated by the rainfall, which was of considerable magnitude in certain localities. However, the snow cover which had accumulated in the western and northern megyek did not disappear; consequently, the nocturnal cold increased considerably over the remaining snow covers after the wind had stopped and the clouds were broken up. The temperature fell below -10 degrees in most of the trans-Danubian region and as low as -10 degrees at Sopron, Szombathely, and Szentgotthard. Following the nocturnal cold, the temperature did not rise above the melting point in many localities even during the day. On the 30th, the highest recording was -5 degrees at Miskolc, Szombathely, and Szentgotthard. Thus, the usually mild month closed with cold weather.(2)

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Distribution of Precipitation  
January 195229 January - 11 February 1952

The weather was seasonable during most of the period under review. Diurnal temperatures were a few degrees above the freezing point for several days throughout the country and during the remaining days in the largest part of the country. The temperature ranged mostly from one to 4 degrees, rising to 5-8 degrees in numerous areas on the 1st, while many localities reported 4-5 degrees even after the 6th. Winter weather prevailed largely along the western, northern, and eastern borders of the country. In the western part of the trans-Danubian region, the temperature fell to -4 to -5 degrees during the noon hours between 29 and 31 January.

Nocturnal cold was also variable. With the exception of one or two days, frost was reported every night throughout the country. Measured at 1½ meters from the ground, the temperature was below -5 degrees during several nights in a large part of the country. The cold was the most severe in the western megyek, where the nocturnal temperature was below -10 degrees from 29 January through 4 February and again on 7, 10, and 11 February. On several nights, temperatures of -15 and -16 degrees were reported along the western border of the country and -17 to -19 degrees at Szentgotthard. The severe cold in the western megyek was the result of the deep snow cover. Frost ranging from -10 to -16 degrees, also due to the deep snow cover, occurred in the northwestern and eastern sections of the country only after 7 February.

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Precipitation, sporadic during the last days of January, was plentiful on 1 February throughout the country, mostly in the form of snow. Thereafter, precipitation fell practically every day, mostly as snow, and was countrywide on the 4th, 5th, and 8th. From 1 to 11 February, precipitation in most parts of the country exceeded 10 millimeters, amounting to 10-25 millimeters in the northern mountain region and on the Great Plain, particularly east of the Tisza. The largest amount of precipitation fell west of the Danube, where some areas received as much as 25-35 millimeters. As a result, precipitation during the first 10 days of February was in excess of the average for half of the month.

At the beginning of the period under review, the snow cover measured 20-30 centimeters in depth in the western part and one to 3 centimeters in the eastern part of the trans-Danubian region, 5-10 centimeters in the northern mountain region, and one to 4 centimeters in a large part of the Great Plain, while snow was seen only here and there in the southern megyek. Following the snowfall on 1 February, a fresh snow cover measuring 10-20 centimeters in depth formed in a large part of the country. Due to repeated snowfalls, diurnal melting, and occasional rainfalls, the snow cover changed constantly. On 11 February, snow was reported only in very few localities in the eastern and southeastern areas of the trans-Danubian region and in the central areas of the Great Plain. The fields were covered by a snow blanket 10-30 centimeters deep in the western and northern parts of the trans-Danubian region, 10-20 centimeters in the lower areas of the northern mountain region, and 10-15 centimeters in most areas east of the Tisza.(3)

#### 12 - 26 February 1952

Diurnal temperatures remained one to 2 degrees below the freezing point during the first week under review in a large part of the trans-Danubian region. At the same time, 5-8 degrees were reported from the eastern part of the country. During the second week, the temperature rose above the freezing point throughout the country, and during the last few days, even 8-10 degrees were reported during the noon hours in most areas.

Nocturnal cold was milder than during the first 10 days of the month. On the 17th, 19th, and 21st, the temperature fell below -10 degrees along the western border and below -13 degrees in the northeast of the country. During these days, the plants were protected by a deep snow cover. Elsewhere, the temperature fell rarely below -5 degrees or even to the freezing point.

Precipitation fell over smaller or larger areas every day. From the 12th through the 25th, precipitation was countrywide on 7 days, while at least half of the country received some precipitation on 3 days. Most of the precipitation fell as snow, while rain fell largely east of the Danube. The water content of snowfalls was the equivalent of 10 to 20 millimeters in large areas, especially on the 12th, 13th, 15th, and 16th. Most of this precipitation fell west of the Danube. The heavy snowfalls and snowdrifts blocked traffic in many parts of the country.

Precipitation from the 1st to the 25th was in excess of 50 millimeters throughout the country, amounting to as much as 70-90 millimeters in many localities along the western border as, for example, near Borzsony. In practically all other sections of the country, precipitation amounted to 30-50 millimeters. By the 26th, precipitation in most areas was more than double of the average for the month, particularly in the western part of the trans-Danubian region, the eastern part of the northern mountain region, and in the eastern megyek.

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As a result of repeated snowfalls, diurnal melting, and rainfalls, the depth of the snow cover varied from area to area. On the 20th, it measured 50-70 centimeters in the western megyek and in many parts of the northern mountain region. On the 26th, the snow cover shrank to 10-40 centimeters in depth in the western megyek and to 30-50 centimeters in the higher areas of the northern mountain region. Elsewhere, the snow had largely melted by 26 February. (4)

1 March - 15 April 1952

Unusual weather conditions prevailed during early spring (1 March - 15 April) of 1952. The increase in monthly average temperatures in various parts of Hungary was as follows (in degrees centigrade):

<u>Place</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>
Magyarovar	0.0	5.2	9.9	15.1
Budapest	1.0	6.3	10.0	16.6
Debrecen	-0.8	5.0	10.3	16.0
Szeged	0.7	6.6	11.4	17.0

This year, the average temperature for March was 3-4 degrees below normal, with 1.8 degrees at Magyarovar (3.4 degrees below normal), 2.8 degrees at Budapest (3.5 degrees below normal), 0.9 degree at Debrecen (4.3 degrees below normal), and 3.6 degrees at Szeged (3.2 degrees below normal). Similar conditions prevailed during the first 2 weeks of April.

Three fairly severe cold waves arrived during early spring. The first arrived on 5 March and lasted for nearly 2 weeks; the second cold wave, much more severe than the first, arrived on 26 March but lasted only 4 days. The temperature dropped to the lowest point on the 28th, with freezing weather of -5 and -8 degrees in several areas. Such weather conditions at the end of March are rare and occur only approximately once in every 20 years (1931, 1918, and 1883). The third cold wave developed at the beginning of April. During the entire month of March, diurnal temperatures rose above 10 degrees only six times and reached 15 degrees on the last day of the month only. Altogether, there were only nine frost-free nights during March.

The inclement early spring appeared especially unpleasant because it followed an unusually mild winter. A similarly harsh early spring after a mild winter occurs on the average once in 10 years (the last three times in 1944, 1931, and 1915).

Due to the low temperatures, most of the precipitation fell as snow. As late as 2 April, heavy snowfalls were reported. However, between the frequent snowfalls, thunderstorms occurred (on 25, 26, 30, and 31 March) in many sections of the country, and some localities even reported hailstorms.

In searching for a reason for these unusual weather conditions, it was discovered that an exceptionally severe winter reigned over the Arctic Ocean and parts of Siberia this year. Toward the end of the winter, snow fell repeatedly in the USSR, and the air over the snow-covered plains cooled off considerably. At the beginning of March, the temperature in the Ural region was around -25 to -30 degrees and in Moscow, -20 degrees. This cold air gradually moved westward and covered nearly all of Europe by mid-March. Subsequently, a warm air wave occurred /direction not given/, without breaking the cold weather and even causing snowfalls in eastern Europe. The more recent snow cover gave rise to a new cold wave by the end of March. The warmer temperature between the two cold waves caused sudden thawing and a rise in the water level of the Danube. At the end of March, the temperature dropped again to -20 degrees in Moscow, and this cold wave likewise penetrated as far as the Atlantic Ocean to the west and the Mediterranean to the south.

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The unusual weather caused spring to come 6 weeks later than usual. The first reports of the swarming of bees, for example, were received as late as the end of March and early April, while migrating birds were seen only here and there, and the first swallows arrived as late as 30 March.

Due to the unusually long winter and the absence of early spring, agricultural work was delayed to a certain extent. The weather was particularly unfavorable for early spring sowing and also for the health of the workers. Lack of vitamins and of ultraviolet rays was felt to a considerable degree. After the cold season, however, warm weather set in suddenly.(5)

27 February - 13 March 1952

The weather was mild during the first week of the period under review but turned unusually cold during the second week.

During the last days of February diurnal temperatures rose to 5-8 degrees in most areas and continued to rise during the first days of March to 10-13 degrees in most sections and as high as 14 to 15 degrees in the south of the trans-Danubian region. As a result of a cold air wave which arrived from the north, the temperature suddenly dropped by 10-15 degrees on 5 March and stood at -2 to -5 degrees during the noon hours throughout the country during the following 3 days. This incident was followed by a fresh rise in temperature, which stood again at 12-13 degrees in numerous areas on the 12th.

Nocturnal cold was also extremely variable. From 27 February to 4 March, frost was reported from most sections; however, the temperature fell below -5 degrees only in the northeast. The frost became extremely severe on the 5th. From the 5th to the 7th, temperatures of -8 to -10 degrees were reported, especially from the northern mountain region and from the Great Plain, while from the 8th to the 10th, the temperature dropped to -10 to -12 degrees in the trans-Danubian region and elsewhere. In certain localities, temperatures as low as -14 to -15 degrees occurred at an altitude of 1½ meters from the ground, which is abnormal in March. The crops were covered by a snow blanket varying in depth. At dawn on the 13th, frost of -1 to -3 degrees was reported only from the northeastern region.

Precipitation fell frequently, but mostly in small amounts. During the last days of February, most sections of the country received one to 5 millimeters' precipitation, and only the Bakony area received somewhat more. Precipitation from 1 to 13 March exceeded 10 millimeters only in a small part of the country, especially in the western part of the trans-Danubian region, some parts of the northern mountain region, and the Great Plain. Precipitation amounted to only 5-10 millimeters in the largest part of the country but was under 5 millimeters in many areas. In general, precipitation during the first 10 days of March was below the normal throughout the country.

Most of the precipitation fell as snow. By 4 March, the deep snow cover had disappeared in most areas, but the severe frost which set in on the 5th found a several-centimeter-deep new snow cover. During the following few days, a one- to 5-centimeter-deep fresh snow cover formed in most localities. By the morning of the 13th, connected snow covers could be found only in the higher mountain areas, while elsewhere the snow had mostly melted.(6)

14 - 28 March 1952

During the 2 weeks under review, the weather was very cold as compared with the average, with nocturnal temperatures particularly low.

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On the 15th, the diurnal temperature was 2-3 degrees in general but sank to the freezing point east of the Tisza. On the 18th, the temperature was 10-12 degrees and in the southern megyek, 14-16 degrees during the noon hours.

Subsequently, there was another shift in temperature. On the 21st, for example, the temperature in a large part of the country rose only to 2-5 degrees. On the 25th, diurnal temperatures were again seasonal at 12-15 degrees and even reached 17-18 degrees west of the Danube. Severe cold weather set in again on the 27th, when the high was one to 3 degrees in a large part of the country.

Nocturnal cold also varied and was mostly severe. After the 14th, frost occurred every night, with one exception. On nine nights, the frost was country-wide. At an altitude of  $1\frac{1}{2}$  meters from the ground, the temperature fell below -5 degrees in large areas on several nights. Temperatures of -10 to -11 degrees were reported from the southern and eastern regions on the 16th and from the northeast on the 26th.

Surface frost set in on large areas at temperatures below -10 degrees on the 15th, 16th, and 20th. On the 16th, the temperature of under -10 degrees extended to the entire country, with the exception of a few trans-Danubian megyek and fell as low as -13 and -14 degrees in several localities. On the 20th, the temperature fell to -15 degrees around Debrecen.

Precipitation was small until the 14th to the 19th, but fell every day thereafter. On the 21st, 24th, and 26th, precipitation was countrywide. On the 26th, the rainfall, particularly in the southern part of the trans-Danubian region and the eastern part of the northern mountains, amounted to 20 to 30 millimeters and in certain localities, to as much as 40 millimeters. Thunderstorms occurred in the western part of the trans-Danubian region on the 25th and in the largest part of the Great Plain on the 26th. Even a hailstorm was reported from Somogyvar.

Precipitation fell mostly as rain and in a small part as snow. The snow cover in the plain regions melted. The higher mountainous areas, on the other hand, were covered by a 10- to 15-centimeter-deep snow blanket as late as the morning of the 28th.

From 1 to 27 March, precipitation totaled 20 to 30 millimeters in the largest part of the country and as much as 40 to 60 millimeters in the southern part of the trans-Danubian region and the Sajo-Hernad region in the north. Less than 20 millimeters fell only in a few areas between the Danube and the Tisza during this period.(7)

#### 29 March - 15 April 1952

The cold weather which had reigned in preceding weeks was followed by considerably warmer temperatures during the period under review. Diurnal temperatures at first showed great variations and then rose rapidly. Warm weather of 15 to 20 degrees set in suddenly during the last days of March, and the temperature advanced to 25 to 26 degrees in many localities on 1 April. On the following day, however, the temperature fell over 15 degrees and stood at 4 to 5 degrees during the noon hours. After a gradual rise, the diurnal temperature reached, on the 8th, 15 degrees, which is normal for this season of the year. Subsequently, the temperature continued to rise and advanced above 20 degrees in many localities after the 10th, reaching 25 to 26 degrees throughout the country on the 14th.

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Parallel with the rise of diurnal temperatures, the nocturnal cold abated gradually. From 29 March to 9 April, nocturnal frost of -1 to -3 degrees was reported repeatedly. However, this frost, measured at an altitude of 1½ meters from the ground, extended to a larger area only on the night from the 3d to the 4th. Surface frost occurred on smaller or larger areas practically every night. During the night from the 3d to the 4th, the frost was countrywide and the temperature dropped to -4 to -5 degrees in a large area. On the 13th, even surface frost disappeared.

Precipitation fell in small amounts over the largest part of the country. In several sections of the Great Plain, and especially in the trans-Danubian region, precipitation during the 2 weeks under review was generally under 50 percent and here and there under 25 percent of normal.

The warm and dry weather was very favorable for the development of plants, as well as for plowing and sowing.(8)

29 April - 12 May 1952

The unusually warm weather continued during the period under review. In numerous sections of the country, precipitation was much more plentiful than in the preceding weeks.

Diurnal warming was unusually great. Following a minor fall in temperature on 26 April, summer weather of 25 to 27 degrees prevailed again during the last days of April. The unusually warm weather extended over the entire country on 1 May. By the 11th, the temperature reached 25 to 29 degrees in practically all sections of Hungary, rising to 30 degrees in the central and southern parts of the Great Plain on the 5th.

The nights were also much milder than usual. Nocturnal temperatures remained mostly above 10 degrees, with minima of 15 degrees in many areas on numerous nights. On the nights from the 4th to the 5th and from the 11th to the 12th, the temperature was 16 to 18 degrees in many localities.

Surface temperature fell below 5 degrees (to a minimum of 3 degrees) only during the last days of April, while the minimum was mostly around 10 degrees from 1 to 12 May.

The warm weather during April was quite unusual. In many sections of the country, the average temperature for the month exceeded the record high for the last 50 to 80 years. In Budapest, for example, a similarly warm April had not been recorded for 110 years.

Due to the thunderstorms and showers, the geographical distribution of the precipitation was extremely uneven. During the last days of April, the rainfall was limited in area and amounted to only a few millimeters. The situation was much better in May, when it rained every day from the 1st to the 11th in many parts of the country. On each of the 6 days from the 5th through the 11th, excepting the 8th, at least half of the country received precipitation in varying amounts. During several days, the precipitation amounted to 10 and even as much as 20 millimeters in some areas, while on the 11th, a shower resulted in 50 to 70 millimeters' precipitation around Borzsony. At the same time, adjacent areas received much less precipitation, in accordance with the peculiarity of thunderstorms and showers.

The geographic distribution of precipitation from 1 to 11 May was very spotty. In large sections of the trans-Danubian region, total precipitation was in excess of 20 and even 30 millimeters as, for example, at Szekesfehervar (46 millimeters) and Koszeg (43 millimeters). However, some parts of Somogy and

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Tolna megyék received only 2-5 millimeters, while most of the northern mountain region had 20 millimeters and here and there as much as 50 to 60 millimeters (Balassagyarmat 67 millimeters and Kiralyret 64 millimeters). On the Great Plain, as in the trans-Danubian region, large areas received 20 to 30 millimeters precipitation, with 40 to 60 millimeters recorded in the bordering areas (Nagykata 41, Lorinci 41, and Galgamacska 81 millimeters). On the other hand, only one to 5 millimeters fell in the southern part of the Great Plain (Baja and Kalocsa, one millimeter; Bacsalmás, Mako, and Izsák, 2 millimeters; and Orosháza 4 millimeters).

In the areas where precipitation was plentiful from the 1st to the 11th, the rainfall exceeded the averages for the period. In the drier areas of the trans-Danubian region and of the Great Plain, on the other hand, precipitation was less than one fourth of the averages for the 11 days.

Following an unusually warm and dry April, the May rains were very beneficial to the crops. (9)

13 - 28 May 1952

The unusually warm weather prevailing in preceding weeks was followed by unusually cold temperatures during the period under review.

Generally, diurnal temperatures were very low. Summer weather ranging from 25 to 30 degrees during the preceding weeks was followed by an 8- to 10-degree fall in temperature on the 13th as a result of an incoming cold wave (direction not given). Due to repeated cold waves, the temperature continued to fall, and diurnal temperatures rose only to 10 to 14 degrees for several days. After the 24th, the weather became gradually warmer and on the 27th, the temperature reached 20 to 22 degrees during the noon hours in most parts of the country.

Nocturnal cold was extremely severe. Frost, at an altitude of  $1\frac{1}{2}$  meters from the ground, occurred in numerous areas from the 18th to the 23d, particularly in the southwestern part of the trans-Danubian region, in the northern mountain region, and east of the Tisza. Measured at an altitude of  $1\frac{1}{2}$  meters from the ground, the temperature fell to -3 degrees in Baranya Megye and around Debrecen. The frost stopped after the 23d, and nocturnal temperatures on the 26th and 27th did not fall below 6 and 10 degrees, respectively.

Surface frost extending over at least half of the country occurred every night from the 18th to the 23d and over the entire country on the 21st. The temperature in most areas ranged from -1 to -3 degrees; it fell as low as -5 degrees around Debrecen and to -6 to -7 degrees at Siklos (Baranya Megye) on the surface. Frost in the second half of May has occurred in Hungary over limited areas before. This year's May frost was unusual, particularly because it extended over the entire country for a long period (6 days), was extremely severe in the south, and hit the crops in an advanced stage of development.

Precipitation fell frequently. On the 12th, 16th, 19th, 24th, and 25th, the rain was countrywide, and on the 13th, 15th, and 26th, it rained over at least half of the country. The precipitation fell in part during thunderstorms, and on the 17th, 19th, 21st, 25th, 26th, and 27th, hailstorms occurred, particularly in the trans-Danubian region.

Apart from isolated areas, precipitation from 1 to 27 May exceeded 30 millimeters everywhere; however, most areas received over 50 millimeters and many localities as much as 75 millimeters, while certain storm centers reported over 100 millimeters as, for example, Ragyogchid (Vas Megye), 139; Galgamacska, 111; Salgotarjan, 106; and Budapest, 100 millimeters. Up to the 27th, the rainfall in the western part of the trans-Danubian region, northeast of Lake Balaton,

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around Borzsony, as well as over one third of the Great Plain, amounted to more than the total average for May. In other sections of the country, the rainfall was between 50 and 100 percent of the average.(10)

29 May - 10 June 1952

The weather during the period under review was characterized by varying temperature and frequent rains.

The diurnal temperature was extremely variable. During the last 10 days of May, the weather became gradually warmer and on the 31st, summer weather of 25 to 28 degrees set in, advancing to 30 to 33 degrees between 1 and 3 June. Thereafter, the heat abated and the temperature generally did not rise above 20 to 24 degrees.

Nocturnal cold was also variable. During the last days of May, the temperature fell to 8 to 10 degrees at night. During the first days of June, nocturnal temperatures were around 15 degrees but later fell to 8 to 10 degrees in some localities.

Precipitation fell frequently. On the 28th and 29th, the rain was country-wide and on the 30th, it rained in numerous areas. During the first 10 days of June, the rain was countrywide on the 3d, 7th, and 9th, and approximately half of the country received rainfall on the 4th and 8th. Due to the stormy character of the rains, the geographic distribution of precipitation was uneven.

Between 1 and 10 June, the rainfall was generally in excess of 10 millimeters, amounting to over 20 millimeters in numerous areas throughout the country, while in certain storm areas, it exceeded 50 millimeters. Rainy weather set in again on the 11th.

Most of the precipitation fell in form of thundershowers, while hailstorms were infrequent (at Jaszapati on the 3d and at Szolnok on the 6th). The frequent rains were beneficial to the development of the crops.(11)

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